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10/527,128

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Ryuichi Katayama

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EXAMINER

GOMA, TAWFIK A

ART UNIT

PAPER NUMBER

2627

MAIL DATE

DELIVERY MODE

12/03/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/527,128	Applicant(s) KATAYAMA, RYUICHI	
	Examiner TAWFIK GOMA	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is in response to the amendment filed on 9/9/2008

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Kimura (US 2002/0135891).

Regarding claim 1, Kimura discloses an optical head device comprising: a light source (3, fig. 47); an objective lens for focusing light emitted from this light source onto an optical recording medium (1a, 1b, fig. 47); a photodetector for detecting light reflected off said optical recording medium (4, fig. 47); and one or more aberration correction optical elements which are fixed within a path of said light between said light source and said objective lens (2, fig. 47 and par. 94), and correct aberration of said light generated within that path and caused by manufacturing and adjustment errors of the optical components which vary from one such optical head device to another (figs. 49a-49c and par. 220) wherein said one or more aberration correction optical elements are selected from amongst a plurality of different aberration correction optical elements, in accordance with said aberration which varies from one such optical head device to another (pars. 183 and par. 99).

Regarding claim 3, Kimura further discloses wherein said aberration is

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one type of aberration selected from coma, spherical aberration (pars. 201-203), astigmatism, and arrow aberration, a single aberration correction optical element is placed within the path of said light (2, fig. 47), and the single aberration correction optical element corrects said one type of aberration (2, fig. 47).

Regarding claim 12, Kimura discloses a method of manufacturing an optical head device comprising the steps of: assembling an optical system including a light source (3, fig. 47), an objective lens for focusing light emitted from this light source onto an optical recording medium (1, fig. 47), and a photodetector for detecting light reflected off the optical recording Medium (4, fig. 47); measuring aberration generated in a light path within the optical system from said light source to said objective lens (figs. 49a-49c) and caused by manufacturing and adjustment errors of the optical components which vary from one such optical head to another (figs. 49a-49c and par. 220); and selecting, from amongst a plurality of different aberration correction optical elements, based on the results of the measured aberration, one or more aberration correction optical elements for correcting the aberration of said light, and then fixing the optical element or elements within said light path of said optical system (2, fig. 47, pars. 99 and 183).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 2, 4-5, 9-10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura (US 2002/0135891) in view of Applicant's Admitted Prior Art (herein, AAPA).

Regarding claims 2 and 13, Kimura fails to disclose wherein said plurality of different aberration correction optical elements provide correction for mutually different types, signs, and quantities of aberration. The coupling lens of Kimura discloses correction of spherical aberration. AAPA discloses providing a plurality of different aberration correction optical elements which correct for different types, signs and quantities of aberration (figs. 15a-15c). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to provide for a plurality of elements configured to correct for different types, signs and quantities. The rationale is as follows: One of ordinary skill in the art at the time of the applicant's invention would have provided the plurality of elements in AAPA as a substitution of a known element for another in similar devices to obtain predictable results.

Regarding claims 4 and 5, AAPA discloses providing the plurality of devices as applied to claims 2 and 13 above. AAPA further discloses wherein said aberration includes two and three types of aberration selected from coma, spherical aberration, astigmatism, and arrow aberration, two or three aberration correction optical elements are placed within the path of said light, and one of the two or three aberration correction optical elements corrects one of said two types of aberration, while another of said two or three aberration correction optical elements corrects another of said two or three types of aberration and yet another of three aberration correction optical elements corrects another of said three types of aberration (figs. 15a-15c and pars. 7-9).

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Regarding claim 9, AAPA discloses providing the plurality of optical elements as applied to claims 2 and 13 above. AAPA further discloses wherein said aberration includes coma, and an aberration correction optical element placed within the path of said light is installed so that a direction of aberration corrected by the aberration correction optical element substantially matches a direction of said coma (par. 7).

Regarding claim 10, AAPA discloses providing the plurality of optical elements as applied to claims 2 and 13 above. AAPA further discloses wherein said aberration includes astigmatism, and an aberration correction optical element placed within the path of said light is installed so that a direction of aberration corrected by the aberration correction optical element substantially matches a direction of said astigmatism (par. 9).

Claims 6 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura (US 665130) in view of Minoura (US 4139267).

Regarding claim 6, Kimura fails to disclose wherein the plurality of optical elements correct for coma, spherical, arrow aberrations and astigmatism, and a lens is provided for each type. Kimura discloses correction and a lens for spherical aberration. In the same field of endeavor, Minoura discloses a lens group which corrects for aberration wherein said aberration includes coma, spherical aberration, astigmatism, and arrow aberration (Table 1, col. 4), four unpowered aberration correction optical elements are placed within the path of said light, and a first aberration correction optical element of the four aberration correction optical elements corrects said coma, a second aberration correction optical element corrects said spherical aberration, a third aberration correction optical element corrects said astigmatism, and a fourth unpowered aberration correction optical element corrects said arrow aberration (fig. 2). It

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would have been obvious to one of ordinary skill in the art to modify the apparatus disclosed by Kimura by providing the lens group of Minoura. The rationale is as follows: One of ordinary skill in the art would have provided the lens group of Minoura as a substitution of one known element for another in a similar device ready for improvement in order to obtain predictable results.

Regarding claim 11, Kimura fails to disclose correction of arrow aberration. In the same field of endeavor, Minoura discloses wherein said aberration includes arrow aberration, and an aberration correction optical element placed within the path of said light is installed so that a direction of aberration corrected by the aberration correction optical element substantially matches a direction of said arrow aberration (IIP, Table 1, col. 4 and fig. 2). It would have been obvious to one of ordinary skill in the art to modify the apparatus disclosed by Kimura by providing the lens group of Minoura for correction of arrow aberration. The rationale is as follows: One of ordinary skill in the art would have provided the lens group of Minoura as a substitution of one known element for another in a similar device ready for improvement in order to obtain predictable results.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura (US 2002/0135891) in view of Abe (US 6084843).

Regarding claim 7, Kimura fails to disclose wherein at least one of a light incident surface and a light exit surface of said aberration correction optical element is a stepped surface comprising at least 2 steps. In the same field of endeavor, Abe discloses an optical element for aberration correction which has a stepped surface (101, fig. 1). It would have been obvious to one of ordinary skill in the art to modify the apparatus of Kimura by providing the stepped

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optical element of Abe. The rationale is as follows: One of ordinary skill in the art at the time of the applicant's invention would have been motivated to provide the stepped optical element in order to use a holographic optical element which refracts light of different wavelengths differently to record and reproduce from both a CD and a DVD with the same element.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura (US 2002/0135891) in view of Sano (US 6967916).

Regarding claim 14, Kimura fails to disclose rotating the element during installation. In the same field of endeavor, Sano discloses wherein the step of installing said one or more aberration correction optical elements within the optical system comprises the step of rotating said unpowered aberration correction optical element, using an optical axis of said light as a rotational axis, so that a direction of aberration corrected by said unpowered aberration correction optical element matches a direction of aberration generated within the path of said light (col. 10 lines 36-50). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to rotate the element. The rationale is as follows: One of ordinary skill in the art at the time of the applicant's invention would have been motivated to rotate the element in order to orient the optical element to the optimal position to reduce the aberration in the system.

Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura (US 2002/0135891) in view of Ogawa (US 5126994).

Regarding claim 15, Kimura fails to disclose providing circuits for driving the laser and reproducing a playback and error signal. In the same field of endeavor, Ogawa discloses providing a first circuit for driving said light source (14, fig. 3); a second circuit for generating

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a playback signal(33, fig. 3) and an error signal (figs. 4 and 6) based on an output signal from said photodetector; and a third circuit for controlling a position of said objective lens based on said error signal (41, fig. 3). It would have been obvious to one of ordinary skill in the art to provide the circuits of Ogawa. The rationale is as follows: One of ordinary skill in the art at the time of the applicant's invention would have been motivated to provide the circuits of Ogawa in order to process the reproduced light and form the reproduction signal and compensate for errors during playback.

Regarding claim 16, Ogawa further discloses wherein said first circuit is for driving said light source in accordance with a recording signal (13, fig. 3).

Regarding claim 17, Ogawa further discloses wherein said first circuit is for driving said light source with a constant output (col. 5 lines 51-56).

Response to Arguments

Applicant's arguments filed 9/9/2008 have been fully considered but they are not persuasive. With respect to applicant's arguments that the spherical aberration of Kimura is not caused by manufacturing and adjustment errors that varies from device to device, this argument is not persuasive for the following reasons. First, the claim does not require that the spherical aberration vary from device to device as a result of manufacturing and adjustment errors, but instead requires that any aberration that is a result of manufacturing and adjustment errors be corrected. Second, Kimura does disclose that the spherical aberration is corrected and varies from device to device based on manufacturing and adjustment errors (See Pars. 75 and 157).

With respect to applicant's arguments that the lens of Kimura is not fixed within a path of the light, this argument is not persuasive because the embodiment which applicant relies upon

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(par. 697 and element 11, fig. 48) is not cited by the examiner as the disclosure of the claimed invention. Kimura discloses that the lens is fixed, and does not have an actuator in figure 47.

With respect to applicant's arguments that Kimura fails to disclose correction of errors caused by optical components other than the objective lens, this argument is not persuasive because Kimura discloses that the manufacturing and adjustment errors which are corrected are for all the optical components in the system (par. 75). Furthermore, Kimura discloses the use of two lenses which he uses as a system and calls an objective lens. The second lens of Kimura which is between the light source and the objective lens closest to the disc is an "optical component" which is used to correct manufacturing and adjustment errors.

Applicant's arguments regarding the selection of lenses to correct chromatic aberration is not a disclosure of the lenses claimed which correct spherical aberration caused by manufacturing and adjustment errors is not persuasive for the following reasons: First, the claim does not limit the invention to the correction of spherical aberration. Second, as discussed above, Kimura discloses the correction of spherical aberration caused by manufacturing and adjustment errors (pars. 75 and 157).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TAWFIK GOMA whose telephone number is (571)272-4206. The examiner can normally be reached on 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild can be reached on (571) 272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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2627

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